LISAMARIE WINDHAM-MYERS

Research Ecologist
National Research Program, Water Resources Division
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Background:

I am a broadly-trained wetland ecologist with a focus on plant physiology and its influence on carbon, nutrient and trace metal biogeochemistry in tidal marshes. My approach spans landscape-to-molecular scales, as necessary to evaluate biogeochemical processes within an ecosystem context, and to better understand how human and stochastic alterations of wetland structure influence wetland function.

Education:

Ph.D.	Rutgers, The State University of New Jersey	(Ecology)	**1999**
M.S.	Rutgers, The State University of New Jersey	(Geography)	**1995**
B.A.	University of California, Los Angeles (Environmental Engineering)		**1991**

Research and Professional Experience:

Research Ecologist, National Research Program **2004-present**
Water Resources Division, United States Geological Survey, Menlo Park, CA

Lecturer, Coastal Wetlands (EARTHSYS 108/208) **2006-2014**
Earth Systems Program, School of Earth Sciences, Stanford University, CA

Assistant Professor **2000-2004**
Department of Earth and Environmental Sciences, Lehigh University, Bethlehem, PA

Sabbatical - Visiting Scholar **2003**
Department of Geological and Earth Sciences, Stanford University, Stanford, CA

Post-doctoral Fellow **1998-2000**
Department of Biological Sciences, Rutgers University, Newark, NJ

NOAA NERR Fellow / NASA Global Change Fellow **1995-1998**
Department of Ecology and Evolution, Rutgers University, New Brunswick, NJ

Geographic Information System Coordinator (part-time) **1992-1999**
Natural Heritage Program, New Jersey Department of Environmental Protection

Remote Sensing Scientist **1989-1992**
Airborne Sensor Facility, NASA/Ames Research Center, Moffett Field, CA

Current Projects:

NASA ROSES Carbon Monitoring Systems - Linking Satellite and Soil Data to Validate Coastal Wetland "Blue Carbon" Inventories: upscaled support for developing MRV and REDD+ protocols

USGS-USFWS Puget Sound, WA: Assessing Carbon Storage and Wildlife Benefits from Restored Coastal Wetlands in the Nisqually River Delta

Environmental Protection Agency - Mercury on a Landscape Scale: Balancing Regional Exports with Wildlife Health (BREWing Health)

California Department of Fish and Wildlife Ecosystem Restoration Program– BREW2 – Augmentation for a Process-based Approach to Mercury on a Landscape Scale

NASA ROSES Earth Science Applications - Forecasting Coastal Habitat Distribution through Fusion of Earth Observation/Process Models/Citizen Science: A NOAA-NERR Climate Change Adaptation Tool

California Rice Research Board – Mercury in California Rice Systems (with UC Davis)

Elkhorn Slough National Estuarine Research Reserve – Tech. Adv. Committee for Wetland Restoration

Global Science and Data Network for Blue Carbon – http://water.usgs.gov/nrp/blue-carbon/sbc/

Editor – A Blue Carbon Primer: The State of Coastal Wetland Carbon Science, Practice and Policy – CRC Press, release date: September 2017 (editors: Drs. Tiffany Troxler and Stephen Crooks)

Publications (n=52 published, n=6 in revision)

Anderson, F., B. Bergamaschi, L. Windham-Myers, I. Woo, S. De La Cruz, J. Drexler, K. Byrd, K. M. Thorne (2016) Assessing wildlife benefits and carbon storage from restored and natural tidal marsh of Nisqually River Delta: Determining marsh net ecosystem carbon balance. FactSheet3042. http://dx.doi.org/10.3133/fs20163042

Anderson, F., B. Bergamaschi , **L. Windham-Myers** , C. Sturtevant , M. Matteo , J. Drexler , S. Knox , J. Matthes , D. Baldocchi , J. Verfaillie , R. L. Snyder , L. Hastings , and R. Fujii. (2016) Variation of energy and carbon fluxes from a restored temperate freshwater wetland and implications for carbon market verification protocols. JGR-Biogeosciences. http://dx.doi.org/10.1002/2015JG003083

He, S. , S. Malfatti, J. Tremblay, M. Waldrop**, L. Windham-Myers**, F. Anderson, T. Glavina del Rio, S. Tringe (2015). Patterns in wetland microbial community composition and functional gene repertoire of biogeochemical gradients and methane emissions. mBio 6(3):e00066-15. http://dx.doi.org/10.1128/mBio.00066-15

Fichot, C.G., B. Downing, B. Bergamaschi, **L. Windham-Myers, M. Marvin-DiPasquale**, D. R. Thompson, and M. Gierach. (2015) High-resolution remote sensing for water quality monitoring in the California Bay-Delta. Environmental Science and Technology. http://dx.doi.org/10.1021/acs.est.5b03518

Ewing, S. A., J.A. O'Donnell, G.R. Aiken, K. Butler, D. Butman, **L. Windham-Myers**, and M.Z. Kanevskiy. (2015) Labile C and N in Pleistocene permafrost: Long-term anoxia may drive the magnitude of DOC loss upon permafrost thaw. Geophysical Research Letters. http://dx.doi.org/10.1002/2015GL066296

Crooks, S., J. Callaway, L.M. Schile, J.Z. Drexler, **L. Windham-Myers**, and S. Deverel. (2015). Chapter7: Carbon Accounting and Greenhouse Gas Flux. In (eds. P. Hickey and L. Grenier) Bay Ecosystem Habitat Goals Update. http://www.sfei.org/content/bayland-ecology-habitat-goals-update-climate-change

Zhang, H., K.B. Moffett, **L. Windham-Myers,** and S.M. Gorelick. (2014) Hydrological Controls on Methylmercury Distribution and Flux in Tidal Marsh. Environmental Science Technology http://dx.doi.org/10.1021/es500781g

Rothenberg, S.E., **L. Windham-Myers**, and J.E. Creswell. (2014) Rice Methylmercury Exposure and Mitigation: A Comprehensive Review. Environmental Research 133:407-423. http://dx.doi.org/10.1016/j.envres.2014.03.001

Windham-Myers L, (2014), Guest Editor Preface: Methylmercury cycling in wetlands managed for rice agriculture and wildlife: Implications for methylmercury production, transport, and bioaccumulation, Science of The Total Environment. 484, 219-220 http://dx.doi.org/10.1016/j.scitotenv.2014.01.046

Bachand, P.A.M., S. Bachand, J. Fleck, F. Anderson, and **L. Windham-Myers.** (2014) Differentiating transpiration from evaporation in seasonal agricultural wetlands and the link to advective fluxes in the root zone. Science of the Total Environment 484, 232-248 http://dx.doi.org/10.1016/j.scitotenv.2013.11.026

Bachand, P.A.M., S.M. Bachand, J.A. Fleck, C.N. Alpers, M. Stephenson and **L. Windham-Myers**. (2014). Methylmercury production in and export from agricultural wetlands in California, USA: The need to account for physical transport processes into and out of the root zone. Science of the Total Environment 484, 249-262 http://dx.doi.org/10.1016/j.scitotenv.2013.11.086

Drexler, J.Z., J. Paces, C.N. Alpers, **L. Windham-Myers**, L. Neymark, T. Bullen, and H.E. Taylor (2014). $^{234}U/^{238}U$ and $^{87}Sr/^{86}Sr$ in Peat as Tracers of Paleosalinity in the Sacramento-San Joaquin Delta of California.Applied Geochemistry 40, 164–179 http://dx.doi.org/10.1016/j.apgeochem.2013.10.011

Windham-Myers, L., J.T. Ackerman, J.A. Fleck, M. Marvin-DiPasquale, C.A. Stricker, P. Bachand, C.A. Eagles-Smith, D. Feliz, G. Gill, M. Stephenson, C.N. Alpers. (2014). Mercury cycling in agricultural and managed wetlands: synthesis of observations from an integrated field study of methylmercury production, hydrologic export, and bio-accumulation. Science of the Total Environment 484:221-231 http://dx.doi.org/10.1016/j.scitotenv.2014.01.033

Marvin-DiPasquale, M.C., **L. Windham-Myers**, J.L. Agee, E. Kakouros, L.H. Kieu, and J. A. Fleck. (2014) Methylmercury production in sediment from agricultural and non-agricultural wetlands in the Yolo Bypass, California. Science of the Total Environment 484, 288-299 http://dx.doi.org/10.1016/j.scitotenv.2013.09.098

Windham-Myers, L., Marvin-DiPasquale, M., Stricker, C., Agee, J.L., Kieu, L., and Kakouros, E. (2014) Mercury cycling in agricultural and managed wetlands of California, USA: Experimental evidence of vegetation-driven changes in sediment biogeochemistry and methylmercury production. Science of the Total Environment 484, 300-307 http://dx.doi.org/10.1016/j.scitotenv.2013.05.028

Eagles-Smith, C.A., Ackerman, J.T., Fleck, J.A., **Windham-Myers, L.**, McQuillen, H., and Heim, W., 2014, Wetland management strategies to decrease methylmercury bioaccumulation and loads from the Cosumnes River Preserve, California: U.S.G.S. Open-File Report 2014-1172, 42 p., http://dx.doi.org/10.3133/ofr20141172

Windham-Myers, L., M. Marvin-DiPasquale, E. Kakouros, J.L. Agee, L.H. Kieu, C. Stricker, J.A. Fleck, C.N. Alpers, and J.T. Ackerman (2014) Mercury cycling in agricultural and managed wetlands, Yolo Bypass, California: Mercury cycling in agricultural and managed wetlands of California, USA: Seasonal influences of vegetation on mercury methylation, storage, and transport. Science of the Total Environment 484, 308-318 http://dx.doi.org/10.1016/j.scitotenv.2013.05.027

Windham-Myers, L. (2013). Tidal Marsh Restoration: a Synthesis of Science and Management. Book Review (invited). Ecological Restoration 31(3): 338-339. http://dx.doi.otg/10.3368/er.31.3.338

Schile, L., K.B. Byrd, **L. Windham-Myers**, and M. Kelly. (2013) Accounting for non-photosynthetic vegetation in remote sensing based estimates of carbon flux in wetlands: Remote Sensing Letters 4(6):542-551. http://dx.doi.org/10.1080/2150704X.2013.766372

Windham-Myers, L. and J.T. Ackerman. 2012. A Synthesis of Mercury Science to Support Methylmercury Control Studies for Delta Wetlands and Irrigated Agriculture. CAWSB Report. 50 pp. http://delta-mercury-nps.org/documents/NPSWorkgroup_Memo_KnowledgeBase.pdf

Windham-Myers, L. and T. Jabusch. 2012, Yolo Bypass Findings Could Help Wetland Managers Reduce the Methylmercury Problem. Pulse of the Delta, October 2012 (http://www.waterboards.ca.gov/rwqcb5/water_issues/delta_water_quality/comprehensive_monitoring_program/2012_pulseofthedelta.pdf)

Anderson, F., B. Bergamaschi, **L. Windham-Myers**, R. Miller, and R. Fujii. 2012. Observations of the Atmospheric Carbon Cycle in Restored Wetlands. FluxNet Newsletter 4: 17-22 http://bwc.berkeley.edu/FluxLetter/FluxLetter_Vol4_No3.pdf

Windham-Myers, L., K. Ward,M. Marvin-DiPasquale, J.L. Agee, L.H.Kieu, and E.Kakouros. 2011. Biogeochemical Implications of Episodic Impoundment in a Restored Tidal Marsh of San Francisco Bay, California. Restoration Ecology http://dx.doi.org/10.1111/j.1526-100X.2011.00849.x

Windham-Myers, L., Marvin-DiPasquale, M., Fleck, J.A., Alpers, C.N., Ackerman, J., Eagles-Smith, C., Stricker, C., Stephenson, M., Feliz, D., Gill, G., Bachand, P., Rice, A. and Kulakow, R., 2010, Methylmercury cycling, bioaccumulation, and export from natural and agricultural wetlands in the Yolo Bypass; Cooperator Report prepared for the State Water Resources Control Board, by the U.S.G.S., CA Department of Fish and Game, Moss Landing Marine Lab, Battelle Marine Sciences, Bachand and Associates, and the Yolo Basin Foundation. September 30, 2010, 266 p.

Jones, S.A., D. Bornholdt, A. DeGange, D. Lavoie, D. Myers, R. Poore, J. Powell, J. Smith, A.B. Wade, **L. Windham-Myers**. 2010. USGS Long-Term Science Strategy in Response to the Deepwater Horizon Oil Spill Submitted to USGS Management for Council of Environmental Quality Gulf Restoration Plan

Windham-Myers, L., Marvin-DiPasquale, M.C. , Erikson, L., Agee, J.L., Kieu, L.H., Kakouros, E., and Ward, K., 2010, Biogeochemical processes in an urban, restored wetland of San Francisco Bay, California, 2007–2009; Methods and Data for Plant, Sediment and Water Parameters: U.S. Geological Survey Open-File Report 2010-1299, 40 p. http://pubs.usgs.gov/of/2010/1299/

Windham-Myers, L., G. Aiken, J. Bales, B. Bekins, J. E Cloern, C. A Eagles-Smith, R. P Eganhouse, E. Kakouros, D. P. Krabbenhoft, J. R Lacy, L. G Larsen, L. Lucas, M. Marvin-DiPasquale, N. B Rybicki, A. Slowey, R. Stewart, C. Swarzenski, J. K Thompson, M. P Waldrop. Conceptual Model Framework for a Long-Term Science Plan Response to the Deepwater Horizon Oil Spill. Submitted July 9, 2010

Grenier, L., Marvin-DiPasquale, M., Drury, D., Hunt, J., Robinson, A., Bezalel, S., Melwani, A., Agee, J., Kakouros, E., Kieu, L., **Windham-Myers, L.**, and Collins, J.. 2010. South Baylands Mercury Project. Cooperator Report prepared for the California State Coastal Conservancy by San Francisco Estuary Institute, U.S. Geological Survey, and Santa Clara Valley Water District, February 10, 2010, 97 p.

Windham-Myers, L. , Marvin-DiPasquale, M., Agee, J.L. , Cox, M.H. and Kakouros, E. 2009. Monitoring of Vegetation Characteristics for Methylmercury Production in Reference Marshes for Salt Pond Restoration in South San Francisco Bay. Final Report, The San Francisco Foundation, 18 p.

Windham-Myers, L., M. Marvin-DiPasquale, D.P. Krabbenhoft, J.L. Agee, M.H. Cox, P. Heredia-Middleton, C. Coates, and E. Kakouros. 2009. Experimental removal of wetland emergent vegetation leads to decreased methylmercury production in surface sediments. Journal of Geophysical Research 114, G00C05, http://dx.doi.org/10.1029/2008JG000815

Yee, D., J. Collins, L. Grenier, J., Takekawa, D. Tsoa-Melcer, I. Woo., S. Schwarzbach, M. Marvin-DiPasquale, **L. Windham-Myers**, D. Krabbenhoft, S. Olund, and J. Evans, 2008. Mercury and Methylmercury Processes in Northern San Francisco Bay Delta Bay Tidal Wetlands Ecosystems. Project ERP-02D-P62 Final Report. Submitted to the California Bay-Delta Authority Ecosystem Restoration Program. 65 p.

Marvin-DiPasquale, M., Stewart, A.R., Fisher, N.S., Pickhardt, P., Mason, R.P., Heyes, A., and **Windham-Myers, L.**, 2007, Evaluation Of Mercury Transformations and Trophic Transfer in the San Francisco Bay/Delta: Ecosystem Restoration Program: Final Report for Project # ERP-02-P40. Submitted to California Bay Delta Authority 40 p.

Alpers, C.N., C. Eagles-Smith, C.Foe, S. Klasing, M. Marvin-DiPasquale, D.G. Slotton, **L. Windham-Myers.** 2007. Mercury Conceptual Model — Delta Regional Ecosystem Restoration Implementation Plan (DRERIP). Submitted http://www.science.calwater.ca.gov/pdf/drerip/drerip_mercury_conceptual_model_final_012408.pdf 65 p).

Windham-Myers, L. 2005. Effects of plant species on surficial tidal exchanges and porewater concentrations of dissolved inorganic nitrogen in brackish tidal marsh. Biogeochemistry 75:289-304. http://dx.doi.org/10.1007/s10533-004-7587-9

Windham, L., M. Laska, and J. Wollenberg. 2004. Evaluating the progress of wetland restorations in urban landscapes: Case studies for assessing connectivity and function. Urban Habitats 2(1):140-158. http://www.urbanhabitats.org/v02n01/evaluating_full.html

Windham, L., J.S. Weis, and P. Weis. 2004. Metal dynamics of plant litter of *Spartina alterniflora* and *Phragmites australis* in metal-contaminated salt marshes. Part 1: Patterns of decomposition and metal uptake. Environmental Toxicology and Chemistry 23:1520-1528 http://dx.doi.org/10.1897/03-284

Windham, L. and J. Ehrenfeld. 2003. Conflicting effects of a plant invasion on nitrogen cycling processes within brackish tidal marshes. Ecological Applications 13(4): 883-896. http://dx.doi.org/10.1890/02-5005

Windham, L. and L. Meyerson. 2003. Impacts of *Phragmites australis expansion*s on nitrogen dynamics of tidal marshes. Estuaries 26 (2B): 452-464 (Invited Paper)

Lathrop, R.G., **L. Windham,** and P. Montesano. 2003. Does *Phragmites* expansion alter the structure and function of marsh landscapes? Patterns and processes revisited. Estuaries 26 (2B): 423-435 (Invited Paper)

Weis, J., **L. Windham,** and P. Weis. 2003. Patterns of metal accumulation in leaves of the tidal marsh plants *Spartina alterniflora* Loisel and *Phragmites australis* Cav. Trin ex Steud. over the growing season. Wetlands 23: 246-250

Windham, L., Weis, J. and P. Weis. 2003. Uptake and distribution of metals in two dominant salt marsh macrophytes, *Spartina alterniflora* (cordgrass) and *Phragmites australis* (common reed). Estuarine, Coastal and Shelf Science 56:63-72

Weis, P., **L. Windham**, D. J. Burke and J. S. Weis. 2002. Release into the environment of metals by two vascular salt marsh plants. Marine Environmental Research. 54(3): 325-329

Weis, J.S., **L. Windham** and P. Weis. 2002 Growth, survival and metal content in marsh invertebrates fed diets of detritus from *Spartina alterniflora* Loisel and *Phragmites australis* Cav. Trin. Ex Steud. from metal-polluted and clean sites. Wetlands Ecology and Management 10(1): 71-84.

Windham, L., Weis, J.S. and P. Weis. 2001. Patterns and processes of mercury (Hg) release from leaves of two dominant salt marsh plants: *Spartina alterniflora* (salt cordgrass) and *Phragmites australis* (common reed). Estuaries 24(5): 787-799

Windham, L., J. S. Weis and P. Weis. 2001. Lead uptake, distribution, and effects in two dominant salt marsh macrophytes, *Spartina alterniflora* (cordgrass) and *Phragmites australis* (common reed). Marine Pollution Bulletin 42(10): 811-816

Windham, L. 2001. Comparison of biomass production and decomposition between *Phragmites australis* (common reed) and *Spartina patens* (salt hay) in brackish tidal marsh of New Jersey. Wetlands 21(2): 179-188

Weis, J.S.., **L. Windham,** C. Santiago-Bass and P. Weis. 2001. Growth, survival, and metal accumulation by marsh invertebrates fed diets of detritus from *Spartina alterniflora* Loisel and *Phragmites australis* Cav. Trin. Ex Steud from metal-contaminated and clean sites. Wetland Ecology and Management 9(1): 1-14

Rooth, J., and **L. Windham.** 2000. *Phragmites* on death row: Is biocontrol really warranted? Wetland Journal 12(1):29-37

Windham, L. 2000. Microscale spatial distribution of *Phragmites australis* (common reed) invasion into *Spartina patens* (salt hay)-dominant communities. Biological Invasions 1(2/3):137-147

Meyerson, L., K. Saltonstall, **L. Windham,** E. Kiviat, and S. Findlay. 2000. A comparison of *Phragmites australis* ecology in freshwater, brackish and salt marshes of North America. Wetland Ecology & Management 8:89-103

Windham, L. and R. Lathrop. 1999. Effects of *Phragmites australis* (common reed) invasion on aboveground biomass and soil properties in brackish tidal marsh. Estuaries 22(4): 927-935

Windham, L. and T. Breden. 1999. A GIS-based threat analysis of *Helonias bulatta* (swamp-pink) populations of the Big Timber Creek watershed, New Jersey. Bartonia 60:37-48

Professional and Public Outreach (2016-current):

Associate Editor, Wetlands (Society of Wetland Scientists)
US Representative, Blue Carbon Program, Commission for Environmental Cooperation www.cec.org
Steering Committee, Global Science & Data Network for Blue Carbon http://water.usgs.gov/nrp/bluecarbon/sbc
Chapter Lead Author (+Wei-Jun Cai), Tidal Wetlands and Estuaries, State of the Carbon Cycle Report, SOCCR2017
Co-Convener, Session B031, American Geophysical Union Fall Meeting (December 2017): Coastal Blue Carbon
Planning Committed, Joint Ameriflux - North American Carbon Program Meeting (March 2017)
Intergovernmental Panel on Climate Change, Scoping Meeting (4/11, Geneva, Switzerland) and Review Panel
Revisiting the Delta Mercury Strategy Co-Organizer. CA Delta Stewardship Council http://deltacouncil.ca.gov